

BUSINESS MATH

Business Math is a business course designed to prepare students for roles as entrepreneurs, producers, and business leaders by developing abilities and skills that are part of any business environment. A solid understanding of math including advanced algebra, basic geometry, statistics and probability provides the necessary foundation for students interested in careers in business and skilled trade areas. The content includes advanced mathematical operations, including applied technology, related to accounting, banking and finance, marketing, and management.

- DOE Code: 4512
- Recommended Grade Level: Grade 10-11
- Recommended Prerequisites: Algebra I
- Credits: 1 credit per semester, maximum of 2 credits
- Fulfills a Mathematics requirement for the General diploma only or counts as an Elective for the Core 40, Core 40 with Academic Honors and Core 40 with Technical Honors diplomas

Career and Technical Student Organizations (CTSOs)

Career and Technical Student Organizations are considered a powerful instructional tool when integrated into Career and Technical Education programs. They enhance the knowledge and skills students learn in a course by allowing a student to participate in a unique program of career and leadership development. Students should be encouraged to participate in Business Professional of America, DECA, or Future Business Leaders of America, the CTSOs for this area.

Content Standards

Domain – Math Concepts

Core Standard 1 Students demonstrate the knowledge and skills necessary to determine the correct algebraic process to solve problems for a variety of business situations.

Standards

- BMH-1.1 Reinforce basic math skills, such as but not limited to percents, decimals, and fractions, and algebraic skills of solving equations with one or two variables
- BMH-1.2 Select and use appropriate formulas to solve problems
- BMH-1.3 Construct and solve an equation for a given problem using units
- BMH-1.4 Determine if a solution to an algebraic computation is reasonable
- BMH-1.5 Use algebraic graphs in real world situations
- BMH-1.6 Apply complex functions to business financials

Core Standard 2 Students apply geometry principles to solve problems for a variety of business situations.

Standards

- BMH-2.1 Demonstrate ability to take measurements and convert as needed
- BMH-2.2 Use formulas and geometric reasoning necessary for area, perimeter, circumference, diameter, and volume
- BMH-2.3 Determine if a solution to a geometry computation is reasonable

Core Standard 3 Students analyze and interpret data using common probability and statistical procedures to solve problems for a variety of business situations.

Standards

- BMH-3.1 Construct, read, and interpret tables, charts, and graphs
- BMH-3.2 Use probability concepts to predict events
- BMH-3.3 Construct and interpret frequency distribution
- BMH-3.4 Calculate measures of range and central tendency (e.g., mean, median, mode)
- BMH-3.5 Determine if a solution to probability and statistical computation is reasonable

Domain – Accounting Principles

Core Standard 4 Students apply math concepts to analyze and solve problems related to accounting principles for business.

Standards

- BMH-4.1 Calculate equity using the accounting equation
- BMH-4.2 Calculate and plan for taxes including, sales, income, and property
- BMH-4.3 Calculate cost of goods sold, gross profit, operating expenses, and net profit
- BMH-4.4 Determine cost of goods sold using different inventory valuation methods (e.g., LIFO, FIFO)
- BMH-4.5 Calculate manufacturing costs and break-even point
- BMH-4.6 Calculate and plan for a variety of expenses
- BMH-4.7 Calculate company or department overhead based on various situations (e.g., sales or floor space)
- BMH-4.8 Calculate depreciation of assets using various methods (e.g., declining-balance method, sum-of-the-years method)
- BMH-4.9 Compare the costs of renting, leasing, or buying plant or current assets

Core Standard 5 Students apply math concepts to analyze and solve problems related to payroll for business.

Standards

- BMH-5.1 Calculate and maintain employee payroll records
- BMH-5.2 Calculate employee and employer taxes and prepare related reports
- BMH-5.3 Calculate fringe benefits and analyze their effect on the total wage package
- BMH-5.4 Analyze costs of recruiting, placing, and training employees

Domain – Banking and Financial Services

Core Standard 6 Students apply math concepts to analyze and solve problems related to banking services for business.

Standards

- BMH-6.1 Maintain checking account records (e.g. checks, check register, and deposit slips)
- BMH-6.2 Show a reconciliation of a bank statement
- BMH-6.3 Compare and contrast different financial institutions and their services
- Assess data from the stock markets used in making investment decisions

Core Standard 7 Students apply math concepts to analyze and solve problems related to the principles of business finance.

Standards

- BMH-7.1 Calculate various types of interest, (e.g., simple, compound, variable, exact, or

- ordinary)
- BMH-7.2 Calculate the costs associated with installment purchases
 - BMH-7.3 Compare cash price to installment price in order to make a purchasing decision
 - BMH-7.4 Compute the monthly payment, interest, and total amount required to amortize a loan (e.g. mortgage)
 - BMH-7.5 Compare and contrast benefits and cost of long-term debt options for promissory notes and bonds
 - BMH-7.6 Compare and contrast benefits and costs of investment options (e.g. money-markets, CD's, stocks, bonds)
 - BMH-7.7 Understand and calculate present value and future value
 - BMH-7.8 Determine the finance charges on credit card balances
 - BMH-7.9 Compare and contrast the advantages and disadvantages of employee credit card use for business expenses
 - BMH-7.10 Compare and contrast the advantages and disadvantages of offering credit to customers

Domain – Marketing Principles

Core Standard 8 Students apply math concepts to analyze and solve problems related to marketing principles for business.

Standards

- BMH-8.1 Compare and contrast expenses associated with various advertising mediums
- BMH-8.2 Compute extensions, subtotals, sales tax, and sales totals for a sales transaction
- BMH-8.3 Compute markup or markdown
- BMH-8.4 Calculate and analyze different types of trade discounts
- BMH-8.5 Calculate the response rate and results of surveys
- BMH-8.6 Analyze demographic information to make sound marketing decisions
- BMH-8.7 Using trend data and forecasting models, calculate future sales
- BMH-8.8 Calculate and analyze market share
- BMH-8.9 Plan and design various displays for products with different size and shape requirements

Domain – Management Principles

Core Standard 9 Students apply math concepts to analyze and solve problems related to management principles.

Standards

- BMH-9.1 Interpret financial statements to make sound managerial decisions
- BMH-9.2 Create and analyze budgets
- BMH-9.3 Calculate inventory balances and stock reorder points
- BMH-9.4 Calculate necessary ratios to make sound managerial decisions
- BMH-9.5 Calculate the cost of full-time versus part-time employees
- BMH-9.6 Compare and contrast the different types and costs relating to insurance (e.g. property, automobile, bonding)

Domain – Communication

Core Standard 10 Students develop skills to create and present accurate and effective communication

for specific business related purposes and audiences.

Standards

BMH-10.1 Use clear and legible handwriting in all written work and communication

BMH-10.2 Demonstrate active listening skills

BMH-10.3 Use discussion skills to assume leadership and participant roles

BMH-10.4 Use research, composition, and oral skills to present information for a variety of situations utilizing appropriate technology

BMH-10.5 Work cooperatively with peers and authority figures

BMH-10.6 Use clear and concise writing skills to describe, explain, and inform various audiences

BMH-10.7 Follow and interpret directions, graphs, charts and diagrams found in technical writing

BMH-10.8 Use appropriate industry terminology